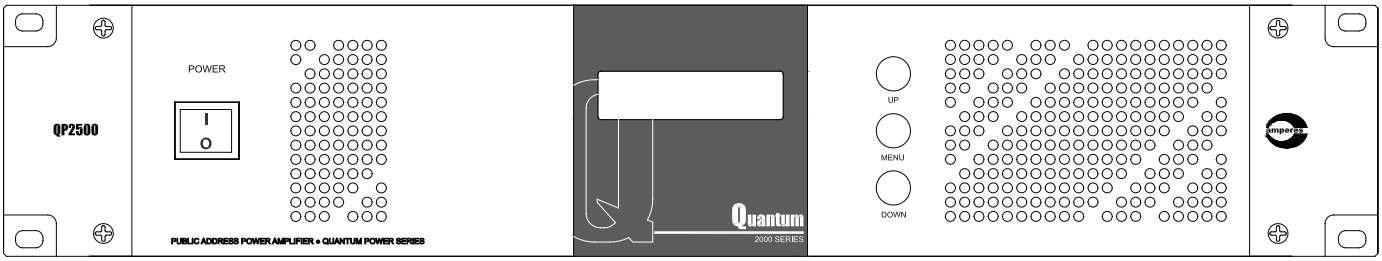
INSTRUCTION MANUAL

QP2125 125W 100V
QP2250 250W 100V
QP2375 375W 100V
QP2500 500W 100V

Quantum Series Power Amplifiers



Thank you for choosing another quality product from Amperes Electronics.

Quantum QP2000 Series of power amplifiers are the latest generation of power packs that had been developed through years of experience, countless feedbacks and limitless fine tuning of its predecessors, thus offering a new and unique audio amplification product.

QP2000 series are available in the power range of 125, 250, 275 and 500W 100V line ratings with 2 hu height. Control parts had been made contemporary with digital settings via front panel or through custom built software. Various and known protection features are incorporated such as auto fault sensing (AFS), in built standby amplifier changeover, temperature sensing and many more.

You shall be very certain that this is the final product you would ever search. We make it available without you paying high price for a premium product that works exceeding your expectation.

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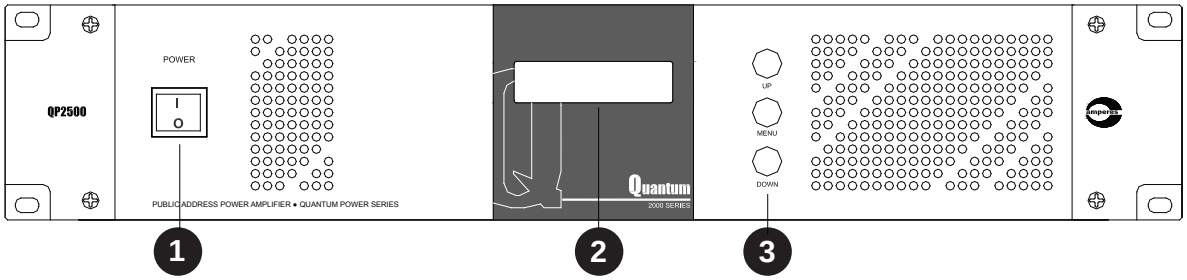
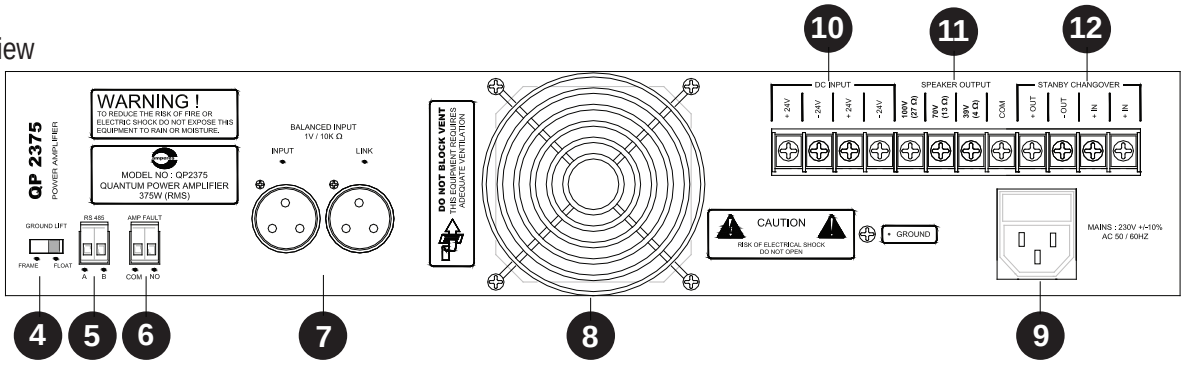
Parts Identification

Front View



Rear View



1. POWER SWITCH

Mains ac power switch. The unit operates with 220 - 240V ac.

2. LCD DISPLAY

2 X 18 character LCD displaying units parameters and programming instructions.

3. CONTROL BUTTONS

Buttons for various controls and setting up the unit.

4. GROUND LIFT SWITCH

Switch to isolate or link signal ground to equipment body.

5. RS485 DATA LINK

RS485 data port for parameter reading or controls from PC or external triggering panel. For PC link, a USB-RS485 converter shall be required whereas the software is available free.

6. AMP. FAULT CONTACT

A dry contact shall be available if the amplifier is detected as faulty. This allows activation of external changeover or enable external notification panel.

7. AUDIO INPUT SIGNAL

The amplifier accepts line balanced audio signal and a link XLR connector is available to connect in parallel to the next amplifier.

8. VENTILATION FAN

It is a variable speed temperature dependant fan with air blows from inside out. The fan can be set to auto or always on mode. See “Setting Up the Unit” in the following sections.

Parts Identifications (con't)

9. AC MAINS INPUT

Operating voltage is 220 to 240V ac ; 50 hertz. Use suitable fuse for replacement.

Recommended Fuse Replacements :

QP2125	QP2250	QP2375	QP2500
5A	5A	6.3A	6.3A

Slow blow fuse is recommended.

10. DC INPUT TERMINAL

24V DC back up supply from batteries are connected to these connectors. Use suitable cable size to avoid overheating of cables.

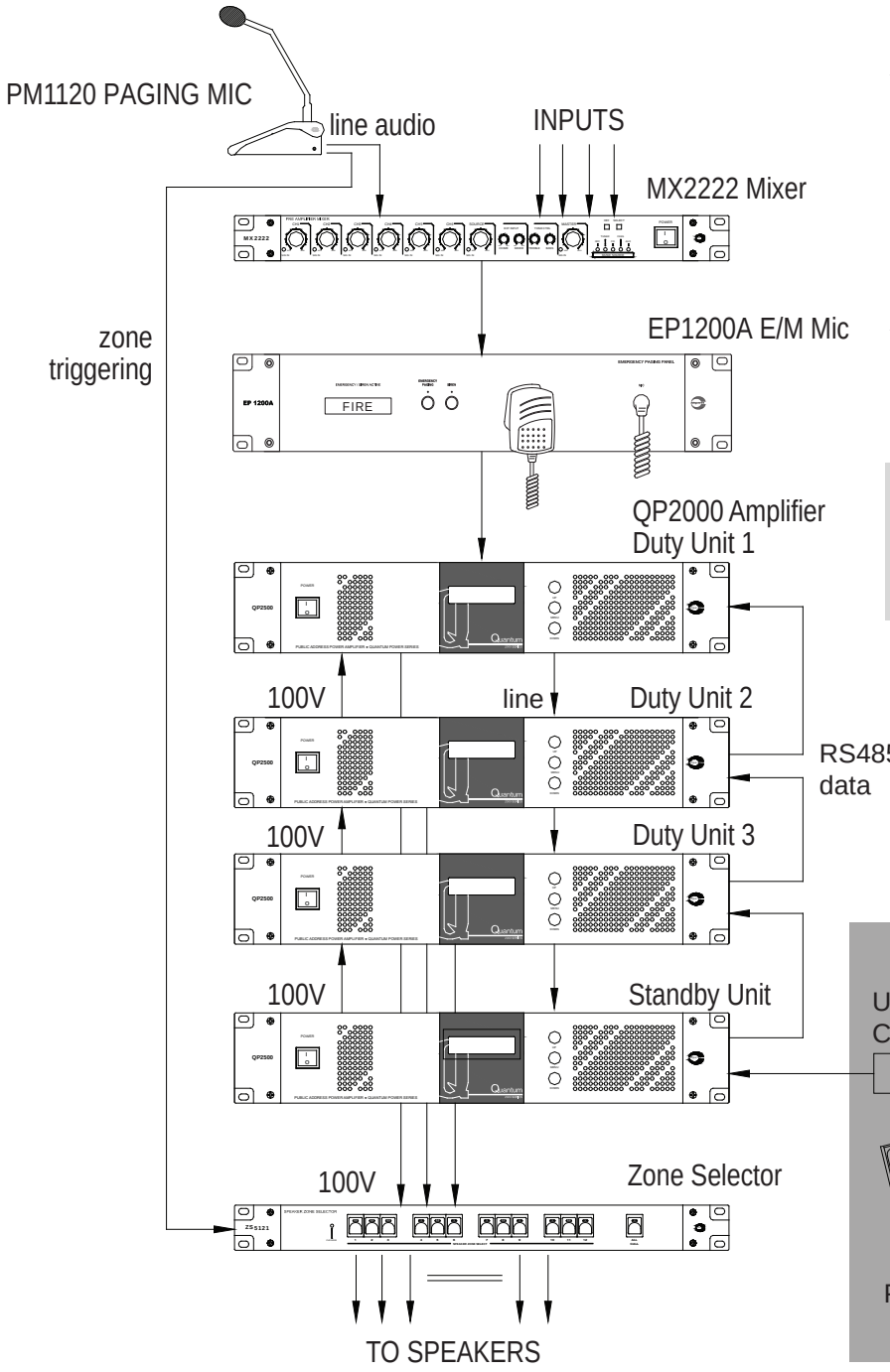
11. AUDIO LINE OUTPUTS

Outputs from the units are available in 100 / 70V line and also for 4 Ohm speakers. At any one time, connect only one terminal.

12. STANDBY AMPLIFIER CONNECTOR

QP2000 series are equipped with Auto Fault Sensing feature with Standby Fault Changeover relay incorporated. Outputs from a standby unit is connected to these terminals and connected to the next duty pack in series. Please refer to the section " Connecting Standby Amplifier ".

General Schematic Diagram



An example of application with single source to amplifiers, with one unit being a standby unit.

For Uninterrupted Paging System or Matrix application, please contact us for further details.

Application of PC monitoring of amplifiers is optional.

To avoid signal distortion in looping the audio, usage of signal distributor (DA2208) is strongly recommended

In PC monitoring, each power pack must be addressed. Up to a max of 16 nos of power packs can be monitored.

Note :

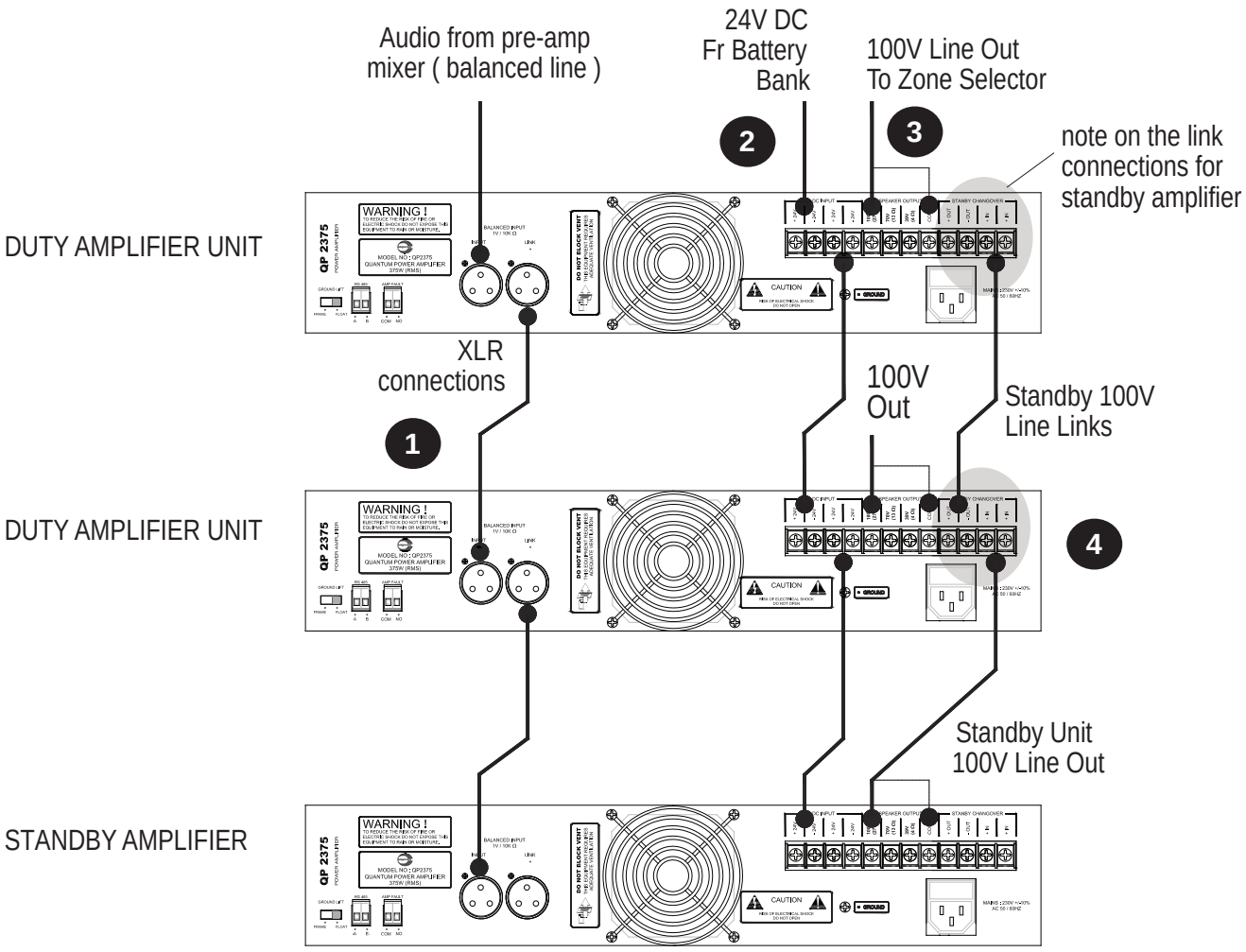
Changeover :
Duty amplifier with higher priority for changeover must be placed nearest to the standby unit. ie. first output connection from standby amplifier must be connected to this unit.

Standby fault changeover only available at 100V line outputs. Thereby to utilise this feature, speaker connections must be terminated at 100V output terminals.

If the system consists of various ratings of power amplifiers, always allocate standby unit with the highest power rating, to avoid overloading in the event that changeover takes place.

Connecting The Unit

A connection diagram for basic installation with single input source from pre-amplifier mixer.



Note 1 :
Loop the audio signal to a maximum of 6 to avoid signal distortion. In case that more amplifiers are required in the system, use a signal distribution amplifier.

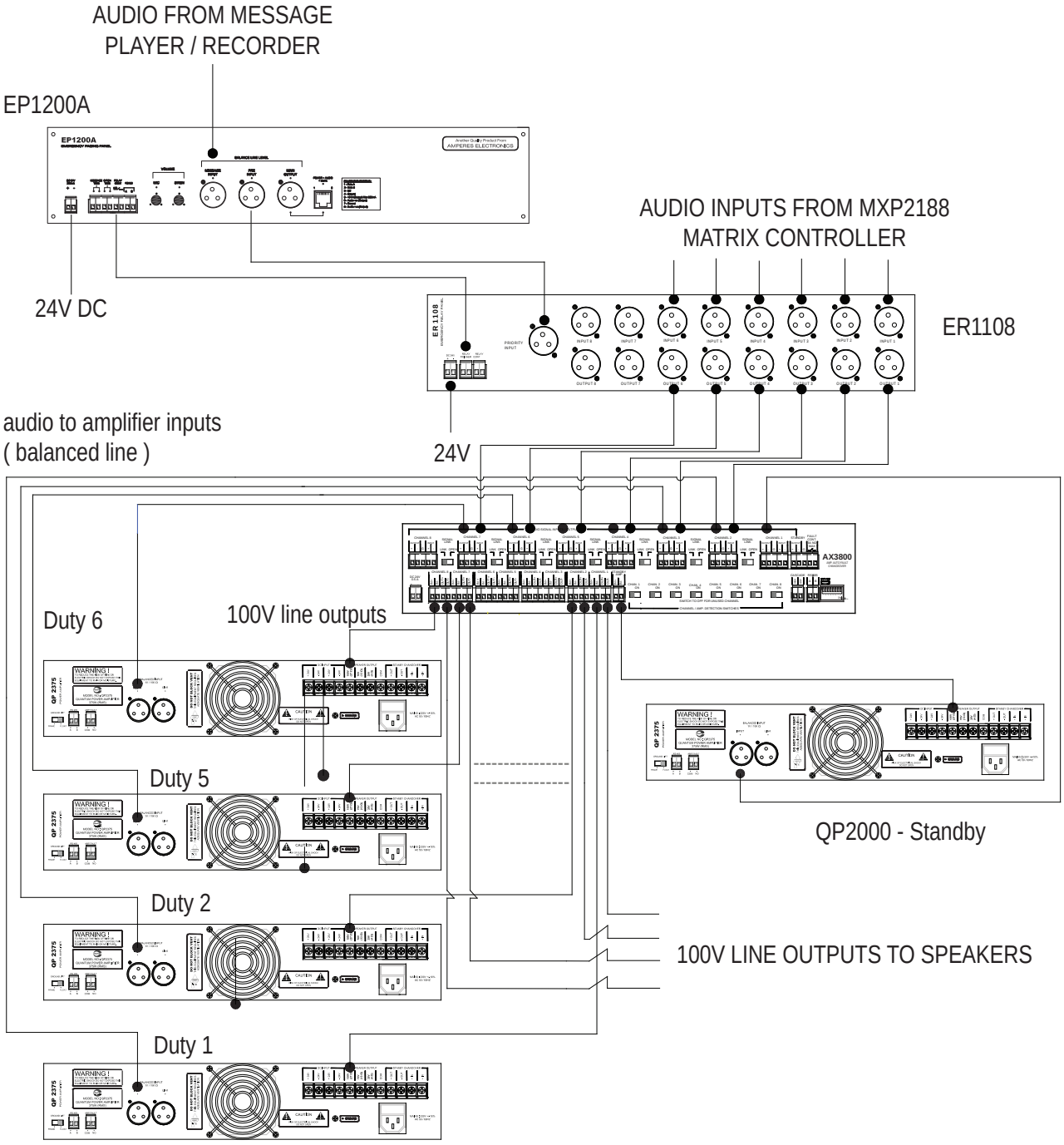
Note 2 :
Always ensure cable size, particularly the incoming cable from battery is sufficient enough to cater for the load during battery takeover when the mains failed. As a rule of thumb, a 2.5mm cable shall not be linked to more than 6 power packs.

Note 3 :
AFS only applies to 100V line output. Should you decide to turn of the feature utilising the internal changeover relay, always connect the output at 100V line terminals. At any one time, never use different outputs simultaneously.

Note 4 :
The amplifier that need to be accorded top priority for changeover should be connected first to the standby amplifier output. If the changeover occurs at the first unit, the remaining shall not be provided with back up output.

In order for changeover to take place, AFS feature must be turned on.

Connecting The Unit - Matrix Paging

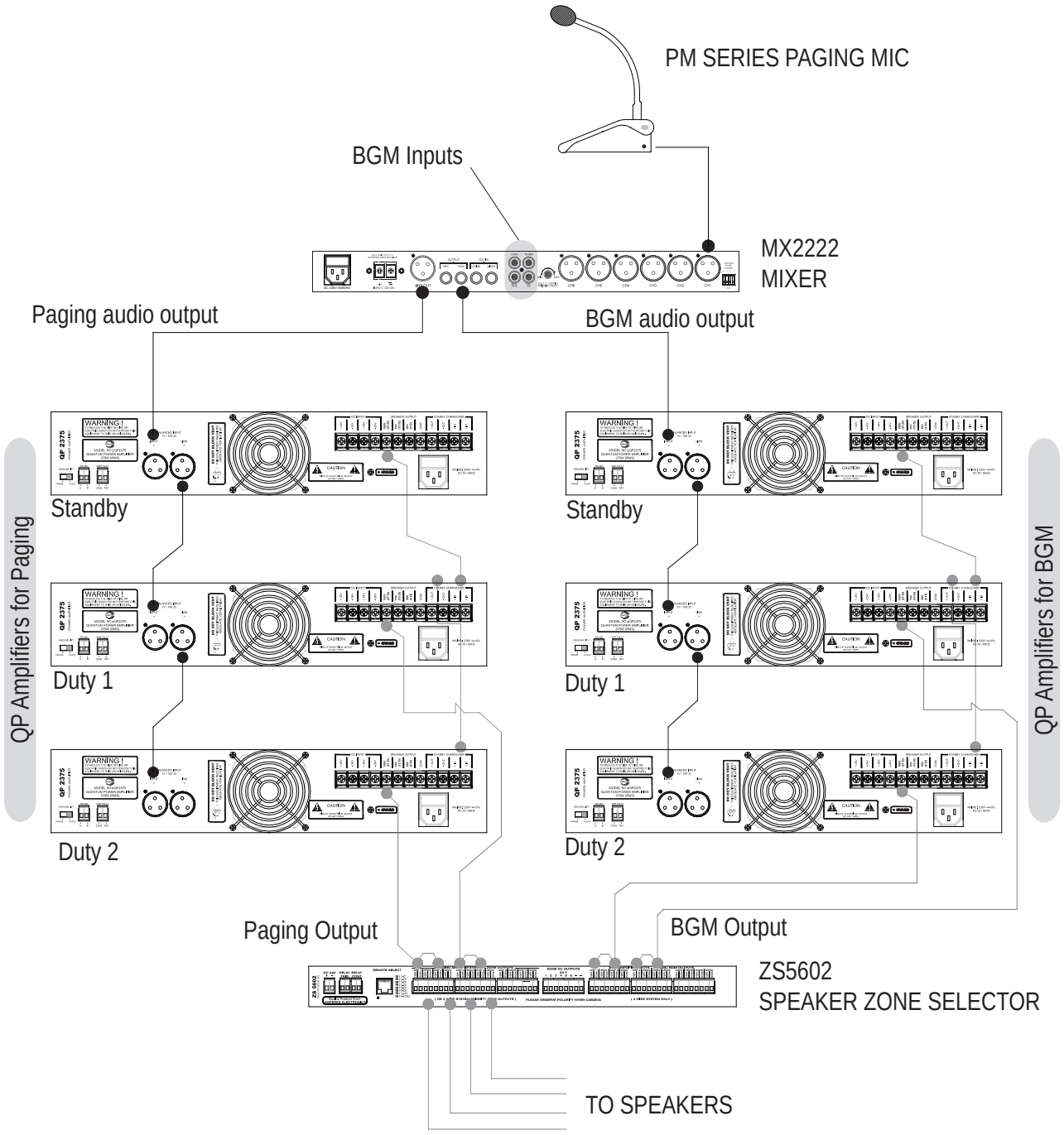


Note :
In matrix system, each amplifier shall be fed with different audio signal ; thereby AX3800 standby amplifier changeover unit shall be used in the setup with the configuration shown above.

Auto fault sensing feature at QP2000 need to be turned off and fault sensing tasks shall be performed by AX3800.

If number of duty amplifiers are more than 8, add ER1108 and AX3800 accordingly.

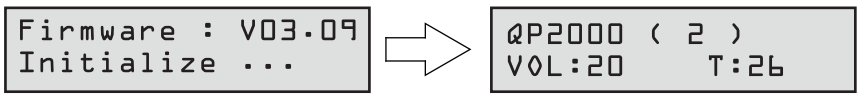
Connecting The Unit - Uninterrupted Paging



Note :
In uninterrupted paging setup, two sets of amplifiers are used; Paging and BGM. Two standby unit shall be required to serve each set of amplifiers. Auto fault feature need to be turned on at duty units.

Setting The Unit

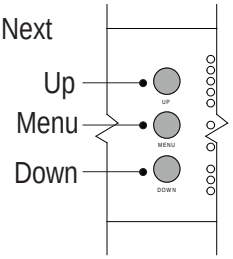
Upon powering up the unit, the display shall appear as shown, Initialising and into ready mode.



Displaying firmware version of the unit

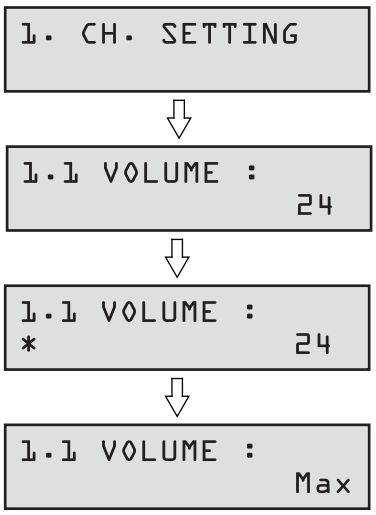
Showing unit address in bracket, volume level and temperature

To begin setting, press the MENU button. Use Next and Prev button to shift around.



Menus available are for :
1. Channel setting
2. Cascading / setting unit address
3. Fan and AFS setting
4. Factory reset

1.0 CHANNEL SETTING



Press MENU and menu 1 Channel setting will appear.

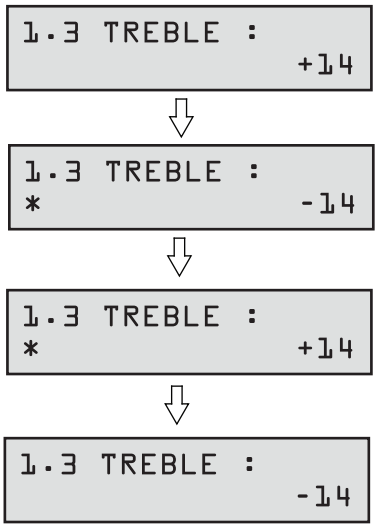
Use UP and DOWN button to select sub menu

To select sub menu for volume adjustment, select 1.1

Press MENU button and an asterisk would appear

Use UP and DOWN key to adjust volume level

To confirm the value, press MENU button.

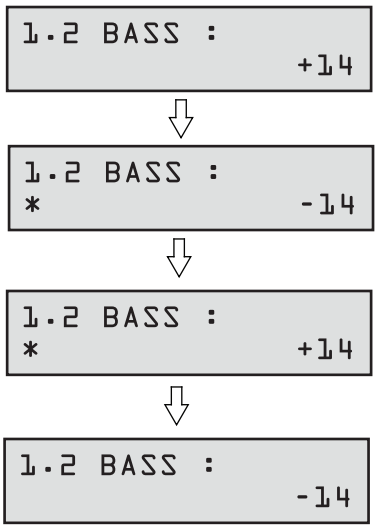


Use UP / DOWN button to select the next sub menu

To select sub menu for treble level, press MENU and asterisk would appear

Use UP and DOWN key to adjust volume level

To confirm the value, press MENU button.

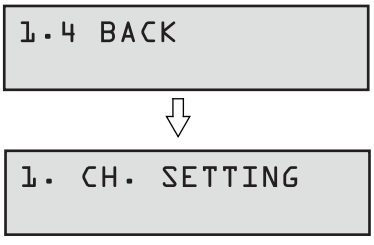


Use UP / DOWN button to select the next sub menu

To select sub menu for bass level, press MENU and asterisk would appear

Use UP and DOWN key to adjust volume level

To confirm the value, press MENU button.



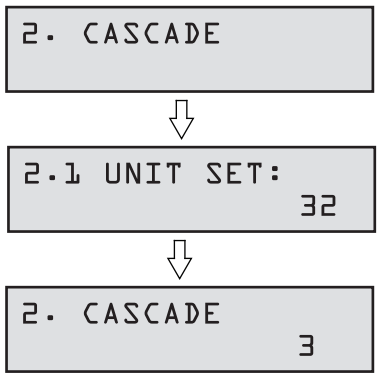
Use UP / DOWN button to return to Sub Menu 1. Select Sub Menu 1.4 and press MENU.

2. CASCADE

Setting the address is used only when all the amplifiers at to be linked to remote PC for monitoring. Software is available free, but an USB-RS485 interface shall be required.

Among parameters that can be monitored are volume, temperature, fan and amp status.

Up to 32 units can be linked together for monitoring.



Select Sub Menu 2 for unit addressing

Use UP and DOWN button to select address number

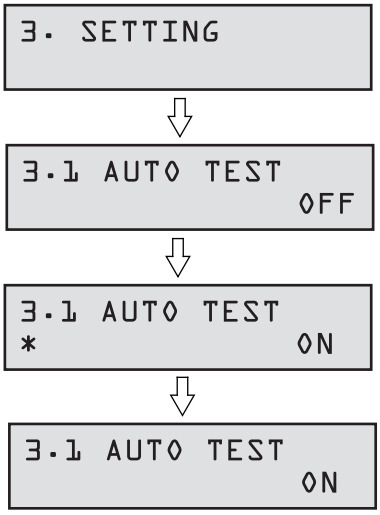
Press MENU button to confirm

3. SETTING

This setting shall be for Auto Fault Sensing (AFS) and fan control

With Auto Test feature on, Pilot Tone of 20KHz would be generated, and the outputs shall be monitored. The absence of the tone shall indicate the amplifier module or the unit is faulty.

At faulty condition, a dry contact shall be activated for external triggering. Similarly, a fault condition data would be sent out via RS485.



Select Menu 3

Use UP and DOWN button to select Sub Menu 3.1 for AFS feature

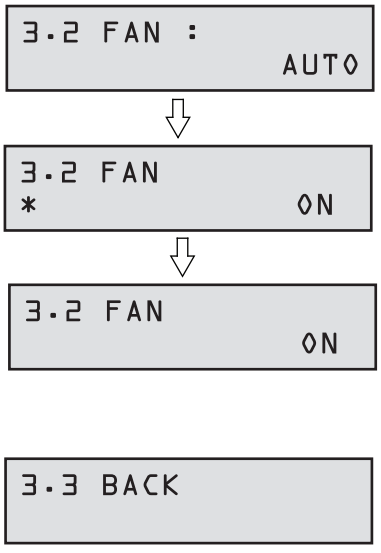
Press MENU button to select the Sub Menu and use UP / DOWN button to turn On or Off.

Once confirm, press MENU and will revert to Sub Menu. Use UP and DOWN button to select other Sub Menu

Fan can be set to Auto mode, which the fan would be automatically turned on upon reaching 29 Deg C at the heatsink and would run at temperature dependant speed.

Another mode is to turn on the fan, running continuously.

We recommend that the fan to be set at Auto mode.



Use UP and DOWN button to select Sub Menu 3.2 for fan control

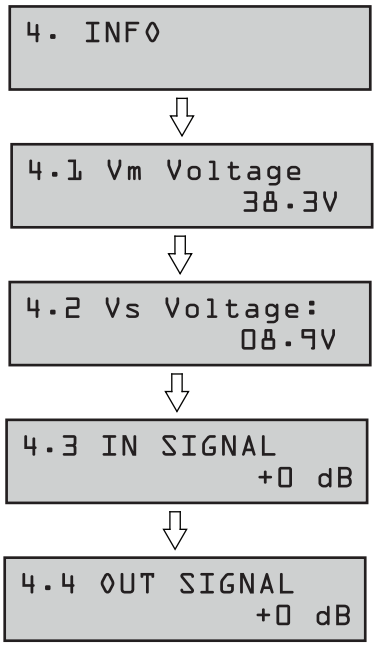
Press MENU button to select the Sub Menu and use UP / DOWN button to turn On or Off.

Once confirm, press MENU and will revert to Sub Menu. Use UP and DOWN button to select other Sub Menu

To exit this sub menu, select Back to Sub Menu 3.

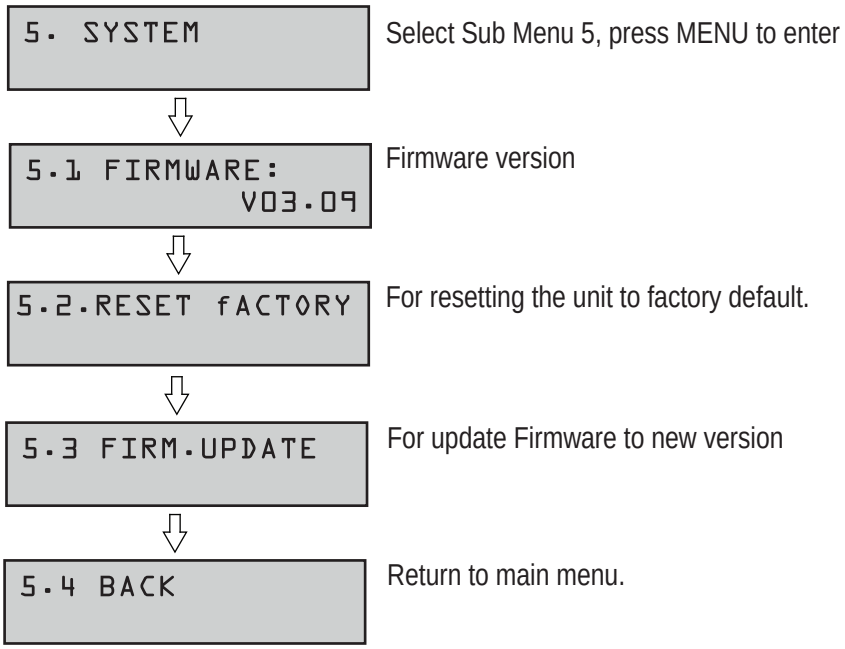
4. INFO

This menu provides information on various parameters such as input and output level.



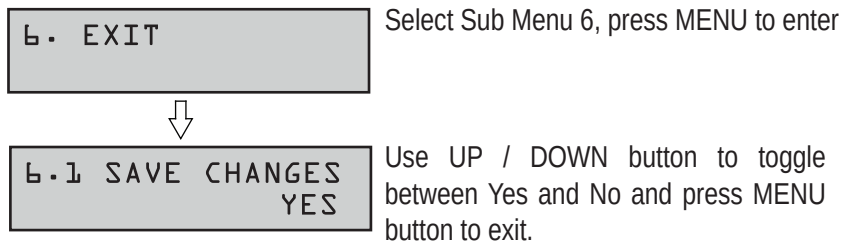
5. SYSTEM

This menu provides information such as system firmware version and would enable the unit to reset to factory setting, erasing all previously set data.



6. EXIT

Use this sub menu to exit setting mode.



Summary of Features

- Digital Setting for various parameters with LCD display
- Auto fault sensing (AFS) with fault contact
- Built in standby amplifier changeover
- RS485 interface for monitoring and remote setting
- Tone and bass controls
- Auto fan speed controls
- Thermal, fuse, output short circuit protections
- High efficiency with low current consumption
- Remote monitoring through PMX II LAN via iPX5500 Comm. Box

Technical Specifications

	QP2125	QP2250	QP2375	QP2500
Power requirement	230 / 240V ac or 24V DC back up supply			
Power consumption (240V ac)	1.3A	2.3A	3.0A	3.7A
Current consumption (24VDC)	8A	15A	20A	25A
Standby current (24VDC)	0.3A	0.31A	0.32A	0.35A
Input signal	1V / 10 K ohm; balanced via XLR female			
Input gain control	-40 to 0 dB			
Rated output (100V, RMS)	125W	250W	375W	500W
4 ohm output voltage	22.3V	31.6V	38.7V	44.8V
Output impedance (max load)	80 Ohm	40 Ohm	27 Ohm	20 Ohm
Frequency response	70 Hz - 15 KHz @ 1 KHz +/- 3 dB			
S/N ratio	>70 dB @ 1 KHz, 1V			
THD + N	<0.18 %			
Protections	Thermal, Short circuit, Overload, Fuse			
Cut off temperature	75 Deg C			
Cooling system	Auto temperature controlled fan speed with auto on			
Indications	LCD with temp, audio level and address			
Communication	RS485, 19.2 kbps			
Fault sensing	Internal Pilot Tone, Detection at 15 to 25 secs at 10 secs intervals			
Fault detection response	Standby amplifier relay activation, fault dry contact			
Dimension (W x H x D)	482 x 88 x 335 mm			
Net Weight (kg)	12.3 kg	13.5 kg	16.5 kg	18.8 kg
Gross Weight	13.7 kg	15 kg	18 kg	20.2 kg

Note:

The above specifications are correct at time of printing but subjected to changes without prior notice due to product improvements.

Warranty Conditions

Only Amperes Electronics Service Centres are allowed to make warranty repairs : a list of Amperes Electronics Service Centres may be asked for by the purchaser or send directly to Amperes Electronics Sdn Bhd at 70 Jalan Industri PBP 3, Tmn Perindustrian Pusat Bandar Puchong, 47100, Puchong, Selangor, Malaysia or its authorized master distributor, TNT Links Sdn Bhd / MyPA Systems Sdn Bhd. This warranty is not valid if repairs are performed by unauthorized personnel or service centres.

This warranty covers only repairs and replacement of defective parts ; cost and risks of transportation as well as removal and installation of the product from the main system are for the account of the purchaser. This warranty shall not extend to the replacement of the unit.

This warranty does not cover damages caused by misuse, neglect, accident of the product as well as using the product with power supply voltage other than shown on the product, or any other power supply source / adaptor not recommended by the manufacturer.

This warranty does not cover damages caused by fire, earthquakes, floods, lightning and every cause not directly related to the unit.

This warranty does not include any indemnity in favor of the purchaser or the dealer for the period out of use of the unit; moreover the warranty does not cover any damages which may be caused to people and things when using the product.

This warranty certificate is valid only for the described product, and is not valid if modifications are made on this certificate or on the identification label applied on the product.

This warranty covers all the material and manufacturing defects and is valid for a period of 12 months from the date of purchase or for a longer period in countries where this is stated by a national law. In this case, the extension is valid only in the country where the product is purchased.

Amperes Electronics Sdn Bhd is not obliged to modify previously manufactured products under warranty if the design changes or improvements are made.

Disclaimer

Information contained in this manual is subject to change without prior notice and does not represent a commitment on the part of the vendor. AMPERES ELECTRONICS SDN BHD shall not be liable for any loss or damages whatsoever arising from the use of information or any error contained in this manual.

It is recommended that all services and repairs on this product be carried out by AMPERES ELECTRONICS SDN BHD or its authorized service agents.

AMPERES series must only be used for the purpose they were intended by the manufacturer and in conjunction with this operating manual.

AMPERES ELECTRONICS SDN BHD cannot accept any liability whatsoever for any loss or damages caused by service, maintenance or repair by unauthorized personnel, or by use other than that intended by the manufacturer.

ISO 9001: 2008
Design & Manufacture of Public Address Equipment and Systems
Certificate No. 16895 / A / 0001 / UK / En

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